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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,940	11/21/2001	Vladimir Pavlovic	23390-000103	1545

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EXAMINER

LUK, LAWRENCE W

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/989,940

Applicant(s)

Pavlovic et al.

Examiner

Lawrence Luk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 4-10 and 14-20 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz (6,483,198) in combination with Kern (6,081,104) and Heavey (5,307,001).

In regard to claim 1, Schmitz discloses the elements as claimed, except for the controller including: feedback means, overcharge means and current control means. Specifically, Schmitz discloses a generator means for generating a charging current for charging the battery, an overcharge current increment to be added to the charging current to yield an overcharge current (refer to col.5, line 2-8), and a controller means for controlling the generator means (refer to col.2, lines 32-36).

Kern shows feedback means for determining at least one of a charge acceptance ability and a state of charge of the rechargeable lead-acid battery during recharging (refer to col.12, lines 27-30).

Heavey shows the overcharge instruction means for determining the overcharge current, the overcharge current exceeding the charge acceptance ability of the battery (refer to col.2, lines

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16-21 and lines 28-30), and the current control means for controlling the generator to supply the charging current and the overcharge current increment; the current control means being operable to deliver the overcharge current to the battery during charging (refer to col.11, lines 29-34).

It would have been obvious to person having ordinary skill in the art at the time of the invention was made to modify the device of Schmitz et al. to include the feedback means as taught by Kern and the overcharge instruction means, current control means as taught by Heavey for the purpose of continuous charging the battery.

In regard to claim 2, Heavey shows the overcharge instruction means is operable to determine an overcharge duration and an overcharge time; and the current control means is operable to deliver the overcharge current to the battery for the overcharge duration at the overcharge time (refer to col.2, lines 38-42).

In regard to claim 3, Heavey shows the overcharge time is determined to be after the state of charge of the lead-acid battery reach (ie. 50%, 75%, 90% etc) (refer to col.1, lines 38-42). Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

3. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz (6,483,198) in combination with Heavey (5,307,001).

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In regard to claim 11, Schmitz discloses the method as claimed, except for determining the overcharge current and supplying the overcharge current increment to the battery.

Specifically, Schmitz discloses generating a charge current for charging the battery and supplying the charging current to the battery (refer to col.5, line 2-8); and determining at least one of a charge acceptance ability and a state of charge of the rechargeable lead-acid battery (refer to col.2, lines 32-39).

Heavey shows determining the overcharge current, the overcharge current exceeding the charge acceptance ability of the battery (refer to col.2, lines 18-21), determining an overcharge current increment to be added to the charging current to yield the overcharge current (refer to col.11, lines 29-34), and the overcharge current increment to the battery, the current control means being operable to deliver the overcharge current to the battery during charging (refer to col.2, lines 5-15).

It would have been obvious to person having ordinary skill in the art at the time of the invention was made to modify the device of Schmitz et al. to include determining the overcharge current and supplying the overcharge current increment to the battery as taught by Heavey for the purpose of continuous charging the battery.

In regard to claim 12, Heavey shows an overcharge duration and an overcharge time is determined; the overcharge current is supplied to the battery for the overcharge duration at the overcharge time (refer to col.2, lines 38-42).

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In regard to claim 13, Heavey shows the overcharge time is determined to be after the state of charge of the lead-acid battery reach (ie. 50%, 75%, 90% etc) (refer to col.1, lines 38-42). Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Allowable Subject Matter

4. Claims 4-10 and 14-20 are objected to as being dependent upon a rejected base claim. The prior art of record fails to teach or reasonably suggest that the associated overcharge duration for each overcharge time being between a half minute and five minutes; and the associated overcharge current for each overcharge time exceeds the charge acceptance ability of the lead-acid battery at the overcharge time by less than one fifth of the battery capacity and by more than one twentieth of the battery capacity. Claims 4-10 and 14-20 would be allowable if rewritten in independent form including all of the limitations of the base claim.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Luk at telephone number (703)305-0617. Any inquiry of a general nature or relating to the status of this application proceeding should be directed to the Group receptionist whose telephone number is (703)305-1782.

LWL

December 11, 2002

Lawrence Luk
examiner
12/17/02